

Biosurfactant from *Streptococcus thermophilus* A inhibit microbial adhesion on silicone rubber

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The ability of the biosurfactant obtained from *Streptococcus thermophilus* A to inhibit adhesion of four bacterial and two yeast strains isolated from explanted voice prostheses to silicone rubber with and without an adsorbed biosurfactant layer was investigated in a parallel-plate flow chamber. The microbial cell surfaces and the silicone rubber with and without an adsorbed biosurfactant layer were characterized using contact angle measurements. Water contact angles indicated that the silicone rubber surface with adsorbed biosurfactant was more hydrophilic (58 degrees) than bare silicone rubber (109 degrees). The results obtained showed that the biosurfactant was effective in decreasing the initial deposition rates of *Rothia dentocariosa* GBJ 52/2B from 1937 to 179 microorganisms cm⁻²s⁻¹ and of *Staphylococcus aureus* GB 2/1 from 1255 to 233 microorganisms cm⁻²s⁻¹, allowing for a 86% reduction of the deposition rate. The deposition rates of *Staphylococcus epidermidis* GB 9/6, *Candida albicans* GBJ 13/4A and *Candida tropicalis* GB 9/9 were far less reduced in the presence of the biosurfactant as compared with the other strains. This study constitutes a promising strategy to prevent the microbial colonization of silicone rubber voice prostheses.